

## **REMARKS**

Claims 16-39 are pending in this application. Non-elected claims 16-26 are withdrawn from consideration.

### **I. Claim Rejection Under 35 U.S.C. § 103**

The Examiner rejects claims 27-39 under 35 U.S.C. §103(a) as being unpatentable over Maeda et al. (US 6,189,771) in view of Imamura et al. (US 2002/0185309), and further in view of Mei (US 6,680,128) in view of Kang et al. (US 5,837,119). Applicants respectfully traverse the rejection.

The process of claims 27 and 33 use a flux which contains a metal powder in the form of scales. The Examiner admits that Maeda et al. and Imamura et al. do not disclose metal powder in the form of scales (see Office Action, page 3, line 11), but asserts that it would have been obvious to include the flake-shaped powders of Kang in the solder paste of Mei (see page 3, lines 17-20).

As discussed in the response filed February 22, 2011, one of ordinary skill in the art would not have included the flake-shaped powders of Kang et al. in the solder paste of Mei.

#### **The Inconsistency of the Examiner's Arguments**

According to the "Response to Arguments" section on pages 11-12 of the final Office Action, the Examiner states that she "**never suggested a modification of Mei's solder composition**" (see item 6 on page 11). However, as mentioned above, the Examiner states "Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made **to include the flake-shaped powders of Kang in the solder paste of Mei** because this produces a better electrical connection with a minimum of filler material" (see page 3, lines 17-20). Thus, the Examiner's position in item 6 on page 11 in response to Applicants' arguments is completely inconsistent with the Examiner's statement on page 3.

Accordingly, the rejection should be withdrawn for the reasons provided in the Request for Reconsideration filed February 22, 2011.

#### **Additional Remarks**

The Examiner further argues that "**Only the shape of the material was modified**" after stating "the Examiner never suggested a modification of Mei's solder composition" (see item 6

on page 11). The Examiner's position seems to indicate that the shape of Mei's solder particles must be modified in order to become flake-shaped (i.e., scale-shaped), as disclosed in Kang. In other words, the Examiner's position is that the particles, for example, the silver coated tin alloy of Mei, can be made flake-shaped in accordance with Kang.

However, according to Mei, the solder composition is melted as a whole, including the silver coated tin alloy particles (see col. 4, lines 10-12). A person of ordinary skill in the art, in view of this teaching, would not have found it obvious that the shape of the particles affects the formation of the connection and creates better electrical conduction. The reason for this is that there are no more particles in the finally formed connection, and thus the shape of the particles has nothing to do with the electrical conduction upon the formation of the connection.

The teaching of "better electrical conduction" in Kang is only applicable to the connection in which **there are particles all the way, even after the formation of the connection**. Therefore, the shape of the connection is very important. As a result, the teaching of Kang cannot be applied to Mei, in which no particle remains in the finally formed connection, to arrive at the presently claimed invention.

The process of claims 27 and 33 use a flux which contains a metal powder in the form of scales, because scales are very effective for bridge formation, as described in paragraph [0039] of the specification. In Mei, because the particles are melted, using scale-shaped particles would not have led to forming a connection having better electrical conduction.

Therefore, a person of ordinary skill in the art would not have been motivated to modify Mei's particles with Kang's flake-shaped powders.

Thus, claims 27 and 33 would not have been obvious over the references.

Claims 28-32 and 34-39 depend directly from claim 27 or 33, and thus also would not have been obvious over the references.

Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

## **II. Double Patenting Rejections**

The Examiner provisionally rejects claims 27, 33 and 39 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 4-6 of copending application No. 10/585,729. The Examiner also rejects claims 27, 33 and 39 on the ground of

nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of US Patent No. 7,632,710.

Applicants respectfully request the Examiner to hold these rejections in abeyance, pending an indication that the claims are otherwise allowable.

### **III. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner find that anything further would be desirable in order to place the application in better condition for allowance, she is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

Tadashi MAEDA et al.

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